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ABSTRACT

The factor make-up of the Protestant Work Ethic, first presented by M. Weber, was explored, and the relationship between endorsement of the Protestant Work Ethic and academic achievement was studied in a sample of 257 high school seniors. The independent variable was level of endorsement of the Protestant Work Ethic. The dependent variable was academic achievement. A principal components factor analysis with varimax rotation was used to determine the factor makeup of the primary construct, Protestant Work Ethic. A Pearson Product Moment Correlation Coefficient was calculated for level of endorsement of the Protestant Work Ethic and each of the 17 measures of academic achievement. The factor analysis identified four factors: (1) effort/success; (2) hard work; (3) anti-leisure; and (4) asceticism. Results show that endorsement of the Protestant Work Ethic was not significantly related to any of the ACT Assessment or Comprehensive Test of Basic Skills scores. Endorsement of the Protestant Work Ethic was significantly negatively related to both Scholastic Assessment Test verbal and mathematics scores. Endorsement of the Protestant Work Ethic was significantly positively related to grade point average (GPA)/ English, GPA/mathematics, GPA/social studies, and GPA/cumulative. Endorsement of the Protestant Work Ethic was not significantly related to GPA/science. (Contains 8 tables and 20 references.) (SLD)

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The Protestant Work Ethic and Academic Achievement

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ED 447 166

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Abstract

The purpose of the present study was to explore the factor make up of the Protestant Work Ethic and the relationship between endorsement of the Protestant Work Ethic and academic achievement.

The sample included 257 high school seniors. The independent variable was level of endorsement of the Protestant Work Ethic. The dependent variable was academic achievement. A principal components factor analysis with varimax rotation was used to determine the factor makeup of the primary construct, Protestant Work Ethic. A Pearson Product Moment Correlation Coefficient was calculated for level of endorsement of the Protestant Work Ethic and each of the seventeen measures of academic achievement. The factor analysis identified four factors: Effort/Success, Hard Work, Anti-Leisure, and Asceticism. Results of the study showed that endorsement of the Protestant Work Ethic was not significantly related to any of the ACT or CTBS scores. Endorsement of the Protestant Work Ethic was significantly negatively related to both SAT/Verbal and SAT/Mathematics scores. Endorsement of the Protestant Work Ethic was significantly, positively related to GPA/English, GPA/Mathematics, GPA/Social Studies, and GPA/Cumulative. Endorsement of the Protestant Work Ethic was not significantly related to GPA/Science.

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Introduction

Background

The thesis first presented by Max Weber in 1904-05 has been debated by scholars for nearly a century. The Protestant Ethic and the Spirit of Capitalism (Weber, 1904-05) is

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just one part of a much larger project designed to examine the effects of the major religions on economic development around the world. Weber was one of a group of scholars that first studied the works of Karl Marx in any comprehensive manner. Although Weber was considered a supporter of Marxist philosophy, he did not agree with Marx in several areas. Weber did not accept the revolutionary nature of Marxist philosophy. He also believed that Marx's failure to acknowledge the importance of the individual's personal belief system as a mistake. In his essay he described his belief that the Protestant Ethic, particularly Calvinism, was an important influence in the development of modern capitalism. The following passage from Weber (1904-05) includes the essence of what he meant when talking about the Protestant Ethic:

> The religious valuation of restless, continuous, systematic work in a worldly calling, as the highest means to asceticism, and at the same time the surest and most evident proof of rebirth and genuine faith, must have been the most powerful conceivable lever for the expansion of the attitude toward life which we have here called the spirit of capitalism.
>
> When the limitation of consumption is combined with the release of acquisitive activity, the inevitable practical result is obvious: accumulation of capital through ascetic compulsion to save (p. 172).

The key ideas included in this passage are (1) the existence of a systematic life style; (2) the belief that this systematic life style was the result of a 'calling' from God; (3) that evidence of one's faith was contained in a person's actions; and (4) that these beliefs led to a lifestyle that promoted limited consumption, restless work, and ultimately accumulation of wealth. It was this lifestyle that preceded what we see as modern capitalism.

Characteristics of the PWE

Scholars both supporting and opposing Weber's thesis have been reasonably consistent when describing the main characteristics of the Protestant Work Ethic.

Work as an End in Itself

One of the characteristics of the Protestant Work Ethic that appeared repeatedly in the literature was the belief that work itself is good. Weber (1904-05) stated: "Labor must, on the contrary, be performed as if it were an absolute end in itself, a calling" (p. 62).

Nature vs. Nurture

Another characteristic of the PWE was the belief that the behaviors which contributed to the development of capitalism were learned. Weber (1904-05) clearly expressed this belief when he stated: "A man does not 'by nature' desire to earn more and more money, but to live as he is accustomed to live and earn as much as is necessary for that purpose" (p. 60).

Strict Economy/Frugality

A third characteristic of the PWE was the ability to focus on a strict economy and frugality. Weber believed that Protestantism taught that the fruits of man's labor belonged to God and therefore were to be dedicated to the service of God. This belief was evident when Weber (1904-05) stated: "The ideal type of capitalistic entrepreneur, ... avoids ostentation and unnecessary expenditure, as well as conscious enjoyment of his power, and is embarrassed by the outward signs of the social recognition which he receives" (p. 71). Finally he stated:

> Man is only a trustee of the goods which have come to him through God's grace. He must, like the servant in the parable, give account of every penny entrusted to him, and it is at least hazardous to spend any of it for a purpose which does not serve the glory of God, but only one's own enjoyment (p. 170).

Order/Avoidance of Spontaneous-Impulsive Action

Protestantism taught that its followers were to live a measured lifestyle that promoted order and the avoidance of spontaneous-impulsive action. Rash action was to be shunned. In describing this characteristic of the Protestant Ethic, Weber (1904-05) stated: the end of asceticism was to be able to lead an alert, intelligent life: the most urgent task the

destruction of spontaneous, impulsive enjoyment, the most important means was to bring order into conduct of its adherents (p. 119).

Economy of Time

The Puritans believed that life was a gift of God. Therefore, the wise use of time was demanded. This characteristic of the Protestant Work Ethic was described by Weber (1904-05) as:

> Waste of time is thus the first and in principle the deadliest of sins. The span of human life is infinitely short and precious to make sure of one's own election. Loss of time through sociability, idle talk, luxury, more sleep than is necessary for health, six to at most eight hours, is worthy of absolute moral condemnation (p. 157-58).

Manifestations of Protestant Ethic Endorsement

The majority of the research in the area of the PWE has focused on the relationship among level of endorsement of the PWE and its manifestations in an individual's behavior and belief systems. Jerald Greenberg conducted a series of studies that found a positive relationship between PWE endorsement and reward allocation in various situations. Greenberg (1978) placed 128 female undergraduate volunteers in various reward allocation situations. Subjects were divided into high and low PWE groups. They then performed a competitive clerical task. Subjects were then told that they won or lost and whether the outcome was fair or unfair. Greenberg reported: "When the competition was fair, subjects who endorsed the Protestant Ethic followed an equity norm by keeping more than half for themselves when they won and less than half when they lost. However, low-PWE subjects followed an equality norm by keeping approximately half the available reward whether they won or lost" (p. 223). In unfair situations the high-PWE subjects allocated awards constant with an equality norm when they lost, but refused to accept an equal share when they won. They, in fact, only accepted about a third share of the reward when they won unfairly.

Greenberg (1979) studied the relationship of PWE endorsement and reward allocation for quantity of work and amount of time working. Greenberg found that high PWE subjects awarded rewards on an equity norm for both quantity and time duration while low PWE subjects allocated rewards on a equality norm for quantity and equity norm for time duration. Stake (1983) using a sample of 106 female and 107 male undergraduate students, studied the reward allocation and willingness to work values as they related to endorsement of the PWE. She found that, "High-PE subjects endorsed the value of putting in extra hours more than did low-PE subjects" (p. 416). Further she stated that her studies "support Greenberg's (1979) conclusion that Protestant Ethic endorsement is associated with allocations based on worker-controlled inputs" (p. 417). Finally, she stated, "These findings provide construct validity for the Protestant Ethic Scale, because high-PE subjects are expected to place greater value than low-PE subjects on the willingness to work hard" (p. 417).

Endorsement of the PWE has been linked with a conservative belief system. Furnham and Bland (1982), using a sample of 79 nonstudent adults, found a significant ($p < 0.001$) positive relationship between PWE scores and scores on the Wilson and Patterson Conservatism Scale. Similarly, Furnham (1984c), using 132 male and 124 female subjects, also found a significant ($p < 0.001$) positive relationship between endorsement of the PWE and scores on the Wilson and Patterson Conservatism Scale.

Persons who exhibit a high endorsement of the PWE have been shown to also have negative attitudes about people in need of financial assistance. MacDonald (1971) found a positive relationship between endorsement of the PWE and beliefs in social responsibility and, thereby, negative attitudes about poor people. Similarly, Furnham (1985) used 132 male and 124 female subjects to study the relationship between eight independent variables, one of which was PWE beliefs and attitudes toward people on welfare.

The literature suggests that persons with a high PWE tend to work longer and are more productive than persons with low PWE beliefs. Merrens and Garrett (1975) provided

empirical support for this expectation. In a study designed "to experimentally determine the work styles of high and low Protestant Ethic individuals in a task designed to provide low motivation and interest level" (p. 125), they reported that "a significant difference was found between the Protestant Ethic groups, with the high Protestant Ethic group spending more time working and also producing more output" (p. 126). Greenberg (1977) provide support for this result finding that, "As expected, the main effect of PE scores was significant, revealing greater productivity among high PEs than low PEs" (p. 684).

The research reviewed above creates a profile of the person who strongly endorses the PWE which is consistent with the description provided by Max Weber. This profile includes many behavioral characteristics valued not only in the world of work but by educators as well. One such characteristic was strong internal locus of control. A person with a strong internal locus of control is one who would accept personal responsibility for his/her behavior and work performance. Much is said about today's students and their lack of a sense of responsibility. If this common observation is true, then one would expect that the present study would find that the current sample would have lower Protestant Ethic Scale scores that samples in the past.

Another characteristic of this profile is asceticism. A person with a strong sense of asceticism is one who values hard work, frugality, wise use of time, self-control, and delayed gratification. Common sense knowledge would suggest that these are characteristics that would be highly desirable for students to possess if they are to achieve academically. This investigator was unable to locate in the literature any empirical support for this common sense belief.

Possession of these characteristics, together with the evidence of actual improved performance by persons with a high endorsement of the PWE, suggests that persons with a high value for the PWE should have higher academic achievement than those persons with a low value for the PWE. A bit of caution is suggested by Wollack (1971) who observed:

> Correlations between attitudes and supposedly logically related behaviors have usually been found to be low. Frequently, a variety of considerations intervene to inhibit the behavioral manifestations of an attitude. Economic and social factors may greatly limit the alternative behaviors available to an individual regardless of his attitudes (p. 331) .

In addition, the research shows that persons with a strong PWE belief tend not to place high value on such characteristics as open-mindedness, creativity, imagination, and intellect. In fact, MacDonald (1971) found a negative correlation between high endorsement of the PWE and years of schooling. Further, what little research that has been done concerning the relationship of the PWE and academic achievement has not shown any significant correlation. Waters, L., Bathis, N. & Waters, C. (1975) studied 165 college undergraduate students and found PWE scores to be "almost completely unrelated to ability as measured by SAT total score" and "none of the PE scales was significantly related to academic performance indexed in terms of cumulative GPA" (p. 450). What does this say for the value of hard work and personal responsibility? Are they not significantly related to high academic performance? Waters et al. (1975) also stated that "it seems reasonable that Protestant Ethic Scale scores did not correlate with GPA. Perhaps PE scales would show differential correlations with performance for specific majors" (p. 450). It was one purpose of the present study to extend this discussion about the relationship between endorsement of the Protestant Ethic and evidence of academic achievement to include a variety of indicators of academic achievement.

Method

Subjects

Subjects were volunteers from required senior courses. Due to the fact that the courses were required of all seniors, the sample could be expected to be representative of the entire senior class of students. From the high schools described above 260 subjects were asked to complete the questionnaire. Of the 260 possible subjects, 98.8% or 257

chose to participate. This sample included 133 females and 124 males. Of the 257 subjects who chose to participate in the study 214 were asked to give the investigator permission to access their academic records. Of that 214 subjects, 93% or 199 chose to give their permission. The sample of 199 subjects included 100 females and 99 males.

Measures

Protestant Work Ethic Endorsement

Protestant Ethic Scale

Protestant Work Ethic endorsement was measured by a single instrument, Protestant Ethic Scale. The Protestant Ethic Scale was developed by Mirels and Garrett (1971) and consists of nineteen items. Responses are on a 7-point Likert agree-disagree scale. Of the nineteen items, sixteen are scored in the direction of high-PWE and three in the direction of low-PWE. Scores range from 7 to 133.

Academic Achievement

American College Testing Program (ACT)

The American College Testing Program developed the ACT Assessment. The assessment includes tests in the content areas of English, mathematics, reading, and science.

Scholastic Aptitude Test (SAT)

The Scholastic Aptitude Test (SAT) was developed by the College Entrance Examination Board and Educational Testing Service. The test used in the present study is the SAT I. This test is a reasoning test that consists of a verbal reasoning test and a mathematical reasoning test.

Comprehensive Test of Basic Skills (CTBS)

The Comprehensive Test of Basic Skills is a national norm-referenced test of basic academic achievement. Sub-tests measure achievement in the areas of language arts, mathematics, science, and social studies.

Grade Point Average (GPA)

Grade point averages were calculated using a four point scale: A=4.00, A- = 3.75, B+ = 3.25, B = 3.00. B- = 2.75, C+ = 2.25, C = 2.00, C- = 1.75, D+ = 1.25, D = 1.00, D- = 0.75, and F = 0.00. Grade point averages were calculated cumulatively from 9th to 12th grade using semester grades for mathematics, science, English, social studies, and overall course work.

Procedures

Data Collection

A single questionnaire was administered to all subjects in a normal classroom setting. Group size ranged from 15 to 28. Approximately a month after the questionnaire was administered test and grade point data was collected.

Results

Scale Characteristics

The mean scores for the Protestant Ethic Scale were found to be 84.4 for males, 86.9 for females and 85.7 for the total sample. This finding was nearly identical to that of the original work of Mirels and Garrett (1971) who found means of 85.5 for the 54 female subjects and 85.7 for the 55 male subjects. It is also within the range of means that have been found in the review of literature which range from 71.8 to 87.5.

The internal consistency reliability was tested by both the Cronbach Alpha and the Guttman Split Half. The Alpha was 0.7370 and the Guttman was 0.7736. This finding was slightly less than Mirels and Garrett (1971) found, 0.79, but well within the range, 0.67 to 0.80, which was found in the relevant research.

Underlying Factors of the PWE

A factor analysis was run on the answers to the nineteen questions from the sample of 257 high school seniors. The data were first subjected to a principal component analysis. The results, shown in Table 1, yielded 6 factors with eigenvalues greater than 1.0 which explained 54.4% of the variance. Examination of the scree plot, Table 2, suggests that a solution of 4 or maybe 5 factors would be more appropriate. A Varimax

rotation of 3, 4, and 5 factors was run. After examination of the rotation data, with an eye to the research, a solution of four factors was determined to be appropriate. Individual questions on the survey were determined to load on a factor if their loading was greater than 0.30. Table 3 displays the rotated factor matrix. Weber's theory, past research, and question content were considered when factors were named (see Table 4). Questions 1, 3, 6, 7, 11, and 19 were found to load on factor 1 which explained 15.26% of the variance. This factor appears to relate to beliefs concerning the link between effort and success, and therefore was called Effort/Success. Questions 10, 13, 16, 17, and 19 loaded on factor 2 which explained 6.76% of the variance. This factor clearly relates to a strong belief in hard work and was titled Hard Work. Questions 2, 9, and 15 loaded on factor 3 which explained 4.42 % of the variance. These question items clearly relate to negative beliefs about leisure and therefore was named Anti-Leisure. Questions 3, 5, 12, and 18 loaded on factor 4, which explained 3.07% of the variance. These questions seem to be assessing beliefs related to self-denial or delayed gratification. This factor was called Asceticism.

PWE and General Academic Achievement

The seventeen dependent variables in this study included two measures of general academic achievement: ACT combined scores and cumulative GPA. Of the total sample 37 subjects took the ACT. As can be seen in Table 5, there was a non-significant correlation of 0.043 between endorsement of the Protestant Work Ethic and ACT combined scores. A total of 194 subjects were included in the analysis of the relationship between cumulative GPA and PWE scores. A correlation, significant at the 0.01 level, of 0.202 was found between PWE scores and cumulative GPA.

PWE and Specific Academic Achievement

Specific academic achievement was measured by fourteen of the seventeen dependent variables. As can be seen in Table 5, of the fourteen dependent variables, five significant relationships were found. A negative correlation significant at the 0.05 level was found between PWE scores and SAT - Verbal scores. A negative correlation significant at the

Table 1

Protestant Ethic Scale - Principal Component Analysis - Initial Extraction

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	3.567	18.774	18.774
2	1.859	9.785	28.559
3	1.502	7.905	36.464
4	1.265	6.660	43.124
5	1.087	5.719	48.843
6	1.049	5.519	54.361
7	0.950	4.999	59.360
8	0.929	4.890	64.250
9	0.862	4.536	68.786
10	0.821	4.322	73.108
11	0.792	4.166	77.274
12	0.725	3.814	81.088
13	0.675	3.555	84.643
14	0.660	3.473	88.116
15	0.580	3.055	91.171
16	0.562	2.959	94.130
17	0.451	2.374	96.504
18	0.363	1.908	98.413
19	0.302	1.587	100.00

0.01 level was found between PWE scores and SAT -Mathematics scores. Two grade point average measures yielded a positive correlation with PWE scores significant at the 0.01 level. Those measures were GPA - Mathematics and GPA - Social Studies. One grade point average, English, correlated with PWE scores in a positive direction and at a 0.05 significance level.

Table 2

Scree Plot

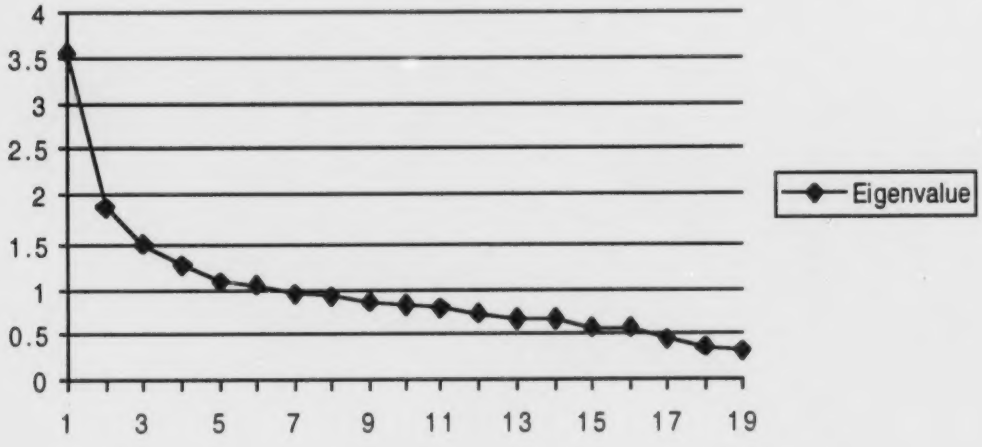

Table 3

Rotated Factor Matrix

	Factor			
	1	2	3	4
Q1	.439	-.139	.103	.108
Q2	.290	-.026	.418	.087
Q3	.316	-.049	.118	.314
Q4	.117	.190	-.018	.294
Q5	.061	.259	.228	.390
Q6	.687	.220	.089	-.031
Q7	.322	.142	.068	.252
Q8	.277	.125	.054	.018
Q9	.077	.077	.691	.075
Q10	.142	.466	.017	.167
Q11	.520	.209	.063	.143
Q12	.157	.162	-.065	.399
Q13	.021	.413	.072	-.028
Q14	.235	.021	-.057	.077
Q15	-.011	-.014	.745	.031
Q16	-.014	.485	-.129	.263
Q17	.231	.701	.018	.149
Q18	.049	.047	.153	.590
Q19	.332	.319	.121	.268

Extraction Method: Unweighted Least Squares

Rotation Method: Varimax with Kaiser Normalization

Table 4

Four Factor Structure of the Protestant Ethic Scale

Factor One, Effort/Success:

1. Most people spend too much time in unprofitable amusements.
3. Money acquired easily (e.g., through gambling or speculation) is usually spent unwisely.
6. Most people who don't succeed in later life are just plain lazy.
7. The self-made individual is likely to be more ethical than the individual born to wealth.
11. People who fail at a job have usually not tried hard enough.
19. A distaste for hard work usually reflects a weakness of character.

Factor Two, Hard Work:

10. Any person who is able and willing to work hard has a good chance of succeeding.
13. Hard work offers little guarantee of success. (scored in reverse)
16. The person who can approach an unpleasant task with enthusiasm is the person who gets ahead.
17. If people work hard enough, they are likely to make a good life for themselves.
19. A distaste for hard work usually reflects a weakness of character.

Factor Three, Anti-Leisure:

2. Our society would have fewer problems if people had less leisure time.
9. People should have more leisure time to spend in relaxation. (scored in reverse)
15. Life would be more meaningful if we had more leisure time. (scored in reverse)

Table 4 (continued)

Four Factor Structure of the Protestant Ethic Scale

Factor Four, Asceticism:

3. Money acquired easily (e.g., through gambling or speculation) is usually spent unwisely.
5. The most difficult courses usually turn out to be the most rewarding.
12. Life would have very little meaning if we never had to suffer.
18. I feel uneasy when there is little work for me to do.

No Load:

4. There are few satisfactions equal to the realization that one has done his best at a job.
8. I often feel I would be more successful if I sacrificed certain pleasures.
14. The credit card is a ticket to careless spending.

Individual Factors

PWE sub-scale scores were formed for each subject by grouping the questions that loaded significantly on each factor and calculating a subtotal value. Internal consistency reliability was tested on each sub-scale by calculation of a Cronbach Alpha. The relationship between each sub-scale and each dependent variable was then explored by calculation of a Pearson Product-Moment Correlation Coefficient. The results are presented in the following paragraphs and in Table 6. There were four relationships which yielded significant correlations.

Factor One, Effort/Success

Factor one was found to correlate negatively and significantly at the 0.01 level with SAT - Verbal and SAT - Mathematics. The relationship between factor one and CTBS - English yielded a correlation that was negative and significant at the 0.05 level. GPA - Social

Studies related to factor one with a correlation that was positive and significant at the 0.05 level. The Alpha for the factor one sub-scale was calculated to be 0.66.

Table 5

Correlation: Protestant Ethic Scale Total Score and Indicators of Academic Achievement

Indicator	Total PWE
SAT - Verbal	-.247*
SAT - Mathematics	-.271**
ACT - English	.038
ACT - Mathematics	-.046
ACT - Reading	-.046
ACT - Science	.067
ACT - Combined	.043
CTBS - English	-.051
CTBS - Social Studies	-.048
CTBS - Mathematics	-.038
CTBS - Science	-.013
GPA - English	.178*
GPA - Mathematics	.217**
GPA - Social Studies	.223**
GPA - Science	.083
GPA - Cumulative	.202**
Level of Activity Involvement	.077

* Correlation is significant at the 0.05 level (2-tailed)

** Correlation is significant at the 0.01 level (2-tailed)

SAT, n = 106; ACT, n = 37; CTBS, n = 179; GPA, n = 194; Activity, n = 257

Table 6

Correlation Between Factors of the PWE and Indicators of Academic Achievement

Indicator	Factor			
	1	2	3	4
SAT - Verbal	-.270**	-.074	-.149	-.084
SAT - Mathematics	-.288**	-.120	-.123	-.091
ACT - English	-.043	.130	-.193	.273
ACT - Mathematics	-.196	.030	-.097	.350*
ACT - Reading	-.103	-.085	-.108	.115
ACT - Science	-.060	.064	-.025	.177
ACT - Combined	-.102	.035	-.117	.247
CTBS - English	-.148*	-.063	-.002	.008
CTBS - Social Studies	-.107	-.068	-.068	.006
CTBS - Mathematics	-.101	-.122	-.022	-.006
CTBS - Science	-.044	-.034	-.085	.031
GPA - English	.068	.154*	.239**	.171*
GPA - Mathematics	.107	.145*	.143*	.275**
GPA - Social Studies	.154*	.134	.168*	.263**
GPA - Science	-.020	.086	.134	.127
GPA - Cumulative	.096	.152*	.196**	.237**
Activity Involvement	-.001	.128*	-.016	.088

* Correlation is significant at the 0.05 level (2-tailed)
** Correlation is significant at the 0.01 level (2-tailed)
SAT, n = 106; ACT, n = 37; CTBS, n = 179; GPA, n = 194; Activity, n = 257

Factor Two, Hard Work

Examination of the relationship between factor two and the dependent variables yielded significant correlation coefficients for four dependent variables. Factor two was found to relate positively and significantly at the 0.05 level with GPA - English, GPA - Mathematics, GPA - Cumulative, and Level of Activity Involvement. The Alpha for the factor two sub-scale was calculated to be 0.66.

Factor Three, Anti-Leisure

GPA - English, GPA - Mathematics, GPA - Social Studies, and GPA - Cumulative were all found to have a significant, positive relationship with factor three. The relationship between both GPA - English and GPA - Cumulative and factor three yielded a correlation, which was significant at the 0.01 level. The two dependent variables, GPA - Mathematics and GPA - Social Studies, were found to have a relationship with factor three that was described by a correlation that was significant at the 0.05 level. The Alpha for the factor three sub-scale was found to be 0.65.

Factor Four, Asceticism

The relationship, as measured by the Pearson correlation coefficient, between factor four and the three dependent variables, GPA - Mathematics, GPA - Social Studies, and GPA - Cumulative, was found to be positive and significant at the 0.01 level. The correlation between the two dependent variables, GPA - English and ACT - Mathematics, and factor four was found to be positive and significant at the 0.05 level. The Alpha for the factor four sub-scale was calculated as 0.50.

Discussion

Underlying Factors/Construct

The first problem of this study was to determine what construct was being measured by the Protestant Ethic Scale and if that construct was consistent with past research using this instrument. One question asked was if the strength of endorsement of the construct had remained consistent since the first reported measurement of it in 1971. The literature indicated that average scores on the instrument should range from 71.8 to 87.5. The finding of a mean score of 85.7 indicates that the sample used in this study scored well within the range of means found in the literature and very close to the mean obtained by the authors of the instrument (Mirels & Garrett, 1971) who found a mean of 85.6. The indication of this result is that the general construct measured by this instrument, Protestant Work Ethic, is found in similar strength in this study's sample as in previous

studies' samples. These results give a preliminary indication that the often stated belief that today's students lack the same strength of work ethic as past generations of students is not true. This belief is supported by Furnham (1990a) who stated, "There remains considerable evidence that the PWE is alive and well" (p. 397).

Since the strength of the general construct appears to have remained consistent through the years, another question asked was if the factor makeup of the construct has remained consistent and if endorsement of each factor has remained consistent. Research offers a mixed message concerning the factor makeup of the Protestant Work Ethic as measured by the Protestant Ethic Scale. Mirels & Garrett (1971) found that the scale measured four factors. Because the interfactor correlation was so high, they decided that the four factors were all components of one general factor. Since the study by Isonio and Garza (1987), the practice has been to view the Protestant Work Ethic as a multi-factor construct. Most notably Furnham (1990a) and McHoskey (1994) have called for refinement of the measures of the PWE to better differentiate between factors. But even these two researchers cannot agree on the number and type of factors involved. Furnham found three factors: asceticism, hard work, and leisure. McHoskey found four factors: success, asceticism, hard work and anti-leisure. Even on the factors that they were able to name agreeably, there was no concurrence on the questionnaire items that loaded on each factor. Furnham did not explore the issue of interfactor correlation. McHoskey found limited interfactor correlation.

The present study, like McHoskey's (1994), found four factors: effort/success, asceticism, hard work, and anti-leisure. The items that were found to load significantly on each factor in this study corresponded reasonably closely to those found in the McHoskey study. Also, like McHoskey, this investigator found low to moderate interfactor correlations (see Table 7). Therefore, the present study lends support to the view that the PWE is a multi-factored construct. It appears that while the definition of the factor makeup has not been consistent through the years, the general construct has remained strong. The

factors found to make up the PWE are of interest in at least two ways. First, reliability of the Protestant Ethic Scale could be improved by increasing the reliability of each factor's sub scale. In particular need of reliability improvement is the asceticism factor which seems to be fundamental to the theory base. The present study found an Alpha of 0.50 and McHoskey found an Alpha of 0.54. This was lower than the Alphas found for each other scale which ranged, in both studies, from 0.62 to 0.67. Secondly, it would be of interest to examine the differential effect of varying levels of endorsement of each of the factors on behavioral outcomes. To be able to pursue this type of research, an instrument with much more reliable sub-scales needs to be developed.

In summary, it appears that PWE beliefs are strong among this sample of high school seniors. In addition, while the Protestant Ethic Scale could be a useful tool for gathering information concerning the effect of differential endorsement of the sub-factors of the PWE, it is legitimate to view the PWE as a single general construct that blends several sub-factors in as yet undefined ways. Therefore, what does it mean when a person is said to have scored high on the Protestant Ethic Scale? It means that he/she values the four sub-factors of the PWE more highly than a person who scored lower on the scale. First, he/she believes in a strong connection between effort and success: a belief that with effort comes success. Secondly, he/she believes in the value of hard work: a belief that hard work is good and the path to a better life. Thirdly, he/she sees leisure as an impediment to success: a belief that too much leisure is bad. Finally, he/she believes that self-sacrifice, delayed reward, and a certain amount of suffering is necessary to be successful. Persons who score high on the Protestant Ethic Scale may differ in the relative value they give each of the four sub-factors, but will consistently value the combination of factors higher than the person who scores lower on the scale.

Table 7

Four Factor Inter-Factor Correlation

	Factor			
	1	2	3	4
Factor 1	#			
Factor 2	.475**	#		
Factor 3	.241**	.106	#	
Factor 4	.371**	.374**	.197**	#

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed)

Protestant Work Ethic and Academic Achievement

Questions two and three were discussed together since the results seemed to show that it was irrelevant whether the measure was of general or specific subject academic achievement. What appears to be a more important factor is whether the measure was a standardized, national norm referenced measure as opposed to a teacher-determined measure. The literature and past research are of little value in this area of discussion. Only one study (Waters et al., 1975) has looked at the relationship between endorsement of the PWE and academic achievement. As part of that study, which used a sample of college students, no relationship was found between endorsement of the PWE and either GPA or SAT scores. Waters et al. (1975) suggested that a relationship might be found between endorsement of the PWE and specific areas of achievement.

In the present study there were seventeen dependent variables designed to measure academic achievement in a variety of ways. Of the seventeen measures, eleven were standardized and nationally norm referenced. Five measures were teacher-generated,

classroom based assessments of achievement. The final measure was a self-report questionnaire designed to measure level of involvement in extracurricular activities.

The eleven standardized measures yielded only two significant relationships. None of the ACT or CTBS tests yielded a significant relationship between endorsement of the PWE and the test scores. Contrary to what one might expect, both the SAT-Verbal and SAT-Mathematics tests were shown to be significantly negatively related to work ethic endorsement. How could this possibly be? It seems clear that one time assessments such as these would not necessarily test work ethic. These tests do not measure how the test takers obtained their knowledge, only if they did or did not retain a certain amount of knowledge. It is easy to see that a high-ability student with a low-PWE could achieve the same level of academic competence as a low ability student with a high-PWE. This explanation did not seem satisfactory in that it is based on what would appear to be exception to the norm. With such a significant relationship the explanation should be a more normally occurring practice. The answer may be in the past research. A search of the literature yields several qualities that have been shown to be negatively related to the PWE. Furnham (1987), stated, "Items which correlated with the Mirels and Garrett (1971) PWE significantly positively were Obedient, Polite, Responsible, and Clean, while those that correlated significantly negatively included Broadminded, Courageous, Forgiving, Imaginative, and Intellectual" (p. 631). A possible explanation could be that the skills needed to score well on the SAT include the ability to approach problem solving in a broadminded, imaginative, and intellectual manner.

The five teacher generated, classroom based assessment measures yielded four positive significant relationships. Endorsement of the PWE was found to be positively, significantly related to GPA-English, GPA-Mathematics, GPA-Social Studies, and GPA-Cumulative. The only GPA measure to show no relationship was GPA-Science. The behaviors and beliefs that high-PWE students tend to display include self-motivation (Waters & Zakrajek, 1991) endurance and self-discipline (Mirels, 1990), and productivity

(Merrens & Garrett, 1975). Most teachers are likely to view these traits as positive. In addition, it is easy to see that these traits would be beneficial when it comes to having the perseverance to complete daily assignments and long term projects as well as the periodic formal assessment. Students who display a strong belief in the PWE tend to be rewarded in teacher assessments.

The exact reasons for this result might be found in variety of systemic factors. The educational literature includes a respected body of research related to teacher expectations and student achievement. There is evidence that if a teacher expects a certain type of student to excel then there is a higher probability that the student will excel as opposed to students not of that type. It is a possibility that teachers tend to expect students who display behavioral characteristics related to a strong PWE to achieve higher grades than those that display few of those characteristics.

Another possible explanation might be found in the instructional practices most commonly found in public school classrooms today. Much is written in the popular educational literature about the need to change the current norm in instructional practice from one of teacher centered lecture to one of student centered exploration. The literature has clearly shown that persons with a high level of PWE tend to also have a high internal locus of control. This type of student would rely less on external motivation provided by the teacher. Therefore, a student with a high level of PWE might need less active involvement in the instructional activities than a student with a lower PWE to reach a higher achievement level.

Although possible explanations for the positive relationship between level of endorsement of the PWE and academic achievement as measured by GPA have been presented, the actual explanations are at this point a matter of speculation and warrant further research.

It has been shown that a strong PWE tends to be rewarded with good grades. The questions must be asked, Is a strong work ethic enough to get good grades? and Does GPA

measure academic achievement in addition to work ethic? To explore these questions a correlation coefficient was calculated for each of the five teacher generated assessment measures and each of the eleven standardized, norm-referenced measures. As can be seen in Table 8, the relationship between all GPA measures and all SAT and CTBS measures were positive and significant. All 30 possible relationships were found to be positive and significant. The relationship between the GPA measures and the ACT measures was less notable with just 16 of the 25 possible relationships reaching positive significance. Overall, 46 of the possible 55 relationships were positive and significant. It would be a fair statement that academic achievement as measured by teacher-generated assessments are positively correlated with academic achievement as measured by standardized norm referenced tests. Therefore, while teacher generated assessments do tend to value student work ethic, they also tend to measure academic achievement as well as standardized measures.

McHoskey (1994) suggested that the PWE is a multi-factor construct. In addition he suggested that more research was needed to better define not only the factor make-up of the construct but each sub-factors' relationship to other personality traits and overt behaviors. Although the current study does not provide strong support for the idea of the PWE being made up of sub-factors distinct enough in their nature to warrant individual interpretation, neither does it present strong enough evidence to dismiss the notion. Helmstader (1964), cited in Borg (1989), identified reliability coefficients for attitude measures of 0.47 as low, 0.79 and medium, and 0.98 as high. The reliability coefficients for factors one, two and three should be considered medium to low while the reliability coefficient for factor four is clearly low. The relationships among the four sub factors found with the factor analysis and the seventeen indicators of academic achievement was explored by calculation of a Pearson *r* for each of the four factors and each of the seventeen indicators. The results can be found in Table 6.

Table 8

Grade Point Average Correlation With Standardized Measures

	GPA-MATH	GPA-ENG	GPA-SS	GPA-SCI	GPA-CUM
SAT-VERBAL	.243*	.323**	.296**	.352**	.377**
SAT-MATH	.492**	.265**	.286**	.487**	.467**
ACT-ENGLISH	.281	.164	.324*	.329*	.324*
ACT-MATH	.547**	.391*	.453**	.532**	.568**
ACT-READ	.214	.236	.290	.281	.268
ACT-SCI	.321*	.305	.388*	.327*	.353*
ACT-COM	.363*	.297	.398*	.396*	.408*
CTBS-E/LA	.275**	.421**	.463**	.417**	.408**
CTBS-SS	.297**	.359**	.403**	.398**	.388**
CTBS-MATH	.550**	.413**	.497**	.553**	.521**
CTBS-SCI	.349**	.297**	.360**	.422**	.371**

* Correlation is significant at the .05 level (2-tailed)

** Correlation is significant at the .01 level (2-tailed)

In general the results were consistent with the relationships found between the general construct and the dependent variables. Interestingly, factor one related to very few of the dependent variable measures. The only truly significant relationship is the negative relationship between factor one, Effort/Success, and both SAT-Verbal and SAT-Mathematics. Since no other factor was shown to have a significant relationship with these two measures, it suggests that the question of why PWE would be negatively related to SAT scores could be found in the subject's belief that effort and success are related. The remaining results seem to support the view that the sub-factors are soo weakly correlated adding support for the view that PWE is a multi-factor construct. Factors two, three and

four all show significant correlation with the various GPA measures. Factor three, Anti-Leisure, and factor Four, Asceticism, tend to have a stronger relationship with academic achievement as measured by GPA than factor one, Effort/Success or factor two, Hard Work.

Since each sub-scale lacked adequate reliability, the discussion above is not intended to be considered as evidence of existing relationships, but as a guide for possible future research.

Assessment of Student Academic Achievement

The findings in the present study have implications for educators involved in assessment development and assessment skills training. The practice among legislators, administrators, school boards, and communities is to rely on standardized, norm-referenced measures of student academic achievement. Some states have introduced standardized, criterion-referenced measures in addition to norm-referenced measures, further complicating assessment practices. What is common is the degradation of teacher-generated, classroom based assessment. The present study brings into question the belief that standardized measures of student academic achievement are better than teacher-generated assessment. The present study suggests that standardized measures focus on measurement of student knowledge with no regard to student productivity. On the other hand, teacher-generated assessment tends to evaluate not only student knowledge, but also student productivity.

This raises questions concerning the goal of public education. If we focus our efforts on maximizing the standardized test scores, are we then accepting the goal of maximizing student knowledge without regard for student productivity? Does this then result in students who have mastered sufficient amounts of knowledge to be judged successful, but may or may not have the personal characteristics to put that knowledge to productive use? On the other hand, if we focus our efforts on maximizing GPA scores, we are accepting the goal of maximizing both student knowledge and student productivity.

If teacher-generated assessments were to be given equal or higher regard as standardized assessments, the definition of productivity would need to be examined. The type of productivity that was rewarded with higher GPA scores must be seen as the type of productivity that was valued by the greater society.

Endorsement of PWE Beliefs among High School Seniors

The present study suggests that what teachers and parents see as a decrease in the work ethic among today's youth cannot be explained by the students' belief system. Students today seem to value the PWE belief system as strongly as those of past generations. Therefore, persons concerned about the work ethic of today's youth should look to other factors for an explanation of their perceptions.

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